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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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LUEDEKA, NEELY & GRAHAM, P.C.
P O BOX 1871
KNOXVILLE, TN 37901

EXAMINER

WERNER, BRIAN P

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,727

Applicant(s)

SEFTON, ALAN K.

Examiner

Brian P. Werner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004 and 10 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-10 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-10 and 13-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendments received on April 9, 2004 and May 10, 2004 have been entered. Claims 1, 4-10 and 13-18 remain pending.

Specification

2. The previous specification objection (i.e., to update an incorrect serial number) is withdrawn. The applicable U.S. patent number should be added when available.

Claim Objections

3. The previous claim objection is withdrawn due to cancellation of that claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-6, 7, 10, 13-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kielland (US 6,081,206 A) and Avitzour (US 5,525,883 A).

Regarding claims 1, 10, 13, 15 and 16, Kielland discloses a system for acquiring identification information from parked vehicles using cameras, including a geophysical location system and a computer, all of which are vehicle mounted and transported as described in the previous Office Action (the details of which are incorporated herein by reference).

Kielland does not teach the one or more objects (i.e., the vehicles) being adjacent a location identifier having one or more location identifying characters, the imaging means obtaining an image of the location identifier, and processing the location identifier to determine the location identifying characters, and transmitting location identifying characters. Regarding claim 16 specifically, while Kielland discloses a first imaging system for capturing the object identifier as described in the 102 rejections above, Kielland does not disclose a second imaging system capturing the location identifier.

Avitzour discloses a system in the same field of image processing, and same problem solving area of determining a vehicle's location ("location determination" at column 1, line 8), comprising a plurality of location identifiers (e.g., figure 1, numeral 14; "each landmark 14" at column 4, line 9) having one or more location identifying characters ("bits coded in the checkerboard pattern" at column 4, line 19; "contains information about each landmark ... provides the location and orientation of the block in three dimensions" at column 5, lines 10-15), the imaging means obtaining an image of the location identifier (see figure 1 and figure 4, numerals 12-15), and processing the

location identifier to determine the location identifying characters (figure 4, numeral 33) and thus the position of the vehicle (figure 4, numeral 36).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize, as Kielland's location determination system of the "parking facility" embodiment, the "landmark" system taught by Avitzour as fully described above, whereby the landmarks of Avitzour are placed on the "floor, a ceiling, [or] a wall" (Avitzour, column 2, line 21) of Kielland's facility for image capture by an additional camera properly positioned to capture the landmarks, whereby the images are processed to determine location information according to teaching of Avitzour. One would be motivated to make this combination based on the problem described by Kielland, and the solution taught by Avitzour as follows:

Kielland states that "while the patrol vehicle is operated within an enclosed parking facility (above or below ground) its positioning sub-system 53 must be suitably modified to provide adequate geo-referencing capability", where for example, "satellite signals will be blocked while operating within the facility, alternate position sensors must be available" at column 25, lines 34-40.

Avitzour solves this problem. Specifically, Avitzour states that commonly used location determination schemes suffer from "disadvantages" at column 1, line 32. In particular, one such disadvantage of "Satellite-base positioning" (i.e., such as the GPS system of Kielland) is that it "requires a clear communications path to a satellite" (Avitzour, column 1, lines 38-39). It is this "clear communication" that may be disrupted in a "paring facility" such as the one disclosed by Kielland. Further, such systems are

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"expensive to implement" as described by Avitzour at column 1, line 58. Avitzour solves this problem through the use of the aforementioned "landmarks" that are "insensitive to errors in visual interpretation, and is simple enough to be implemented in a real time system" (Avitzour, column 1, line 66 – column 2, line 1) and that "precisely" determine "position and orientation" (Avitzour, column 2, line 10).

Thus, one would be motivated to make the above combination to ensure uninterrupted and robust location determination in an enclosed facility, that yields precise location information, and is simple and inexpensive to implement.

Regarding claim 4, the Kielland and Avitzour combination teaches a first camera for capturing the license plate (Kielland figure 1, numeral 51), and a second camera for capturing the location identifier (Avitzour figure 1, numeral 12).

Regarding claims 5 and 6, the Kielland and Avitzour combination teaches a third camera (Kielland, "two video cameras 51, each camera being oriented towards one of the two sides of the roadway" at column 12, line 13).

Regarding claims 7 and 18, the Kielland and Avitzour combination teaches a wireless transmitter (Kielland, "radio-frequency transponder" at column 19, line 40).

Regarding claim 14, the Kielland and Avitzour combination teaches a database to locate a parked vehicle (Kielland, "remember where they parked their cars" at column 25, line 54).

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6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kielland (US 6,081,206 A) and Avitzour (US 5,525,883 A) as applied to claim 1, and further in combination with Geiger (US 6,154,010 A).

The Kielland and Avitzour combination discloses a vehicle computer system as depicted in Kielland's figure 1. While Kielland suggests that "additional I/O elements" and "connections" are within the scope of the invention, Kielland does not teach a connector for connecting the apparatus to external power supply.

Geiger discloses a mobile computer comprising a connector for connection to external power supply ("AC adapters that provide direct current to a mobile computer from an external power source" at column 3, line 19).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to provide the mobile computer of the Kielland and Avitzour combination with a connector for connection to an external power source as taught by Geiger, in order to "conserve limited battery life" (Geiger, column 3, line 18) and "conserve battery power" (Geiger, column 3, line 27) in situations where an external power source is available and accessible.

7. Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kielland (US 6,081,206 A) and Avitzour (US 5,525,883 A) as applied to claims 1 and 16, and further in combination with Ninomiya et al. (US 4,611,292 A).

While the Kielland and Avitzour combination teaches the use of solid-state cameras (Kielland, "digital video camera" at column 8, line 45; digital cameras are solid

state; i.e., they utilize solid state image sensors such as CCDs, as opposed to vacuum tubes such as vidicons), Kielland does not teach an infrared camera having an infrared illuminator.

First, it is noted that solid state image sensors are sensitive to infrared light, unless that light is intentionally filtered out. Ninomiya recognizes this fact as described below.

Ninomiya discloses an image processing system where a camera means is mounted on a moving vehicle (figure 19), comprising the use of an infrared camera having an infrared illuminator ("usually, the maximum sensitivity wavelength of the areal solid-state is near 800 nm" and "when light emitting diode of this wavelength is used, the detection sensitivity can be maximized" at column 9, lines 33-37; an 800nm wavelength is infrared light).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to illuminate the objects requiring image capture by the Kielland and Avitzour combination, using infrared light as taught by Ninomiya, in order to maximize the sensitivity of the solid state image sensor disclosed by Kielland. One would be motivated to maximize the sensitivity because it serves to increase the signal-to-noise ratio, thus resulting in a less noisy, clearer image of the object.

Response to Arguments

8. Each of the remarks and/or arguments filed with the amendment received on May 10, 2004 have been considered:

Summary of Applicant's Remarks: The Kielland reference does not anticipate claims 1 and 10 "as amended" (response page 7).

Examiner's Response: Agreed. A new grounds of rejection based on the Kielland and Avitzour combination is advanced above.

Summary of Applicant's Remarks: "The Kielland reference provides no motivation to one of ordinary skill in the art to combine the use of a location identifying marker or character as an alternate means of determining the position of a parked vehicle" (response page 8, second paragraph down).

Examiner's Response: Disagreed. Kielland describes a problem, and Avitzour solves the problem complete with ample motivation as follows:

Kielland states that "while the patrol vehicle is operated within an enclosed parking facility (above or below ground) its positioning sub-system 53 must be suitable modified to provide adequate geo-referencing capability", where for example, "satellite signals will be blocked while operating within the facility, alternate position sensors must be available" at column 25, lines 34-40.

Avitzour solves this problem. Specifically, Avitzour states that commonly used location determination schemes suffer from "disadvantages" at column 1, line 32. In

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particular, one such disadvantage of "Satellite-base positioning" (i.e., such as the GPS system of Kielland) is that it "requires a clear communications path to a satellite" (Avitzour, column 1, lines 38-39). It is this "clear communication" that may be disrupted in a "paring facility" such as the one disclosed by Kielland. Further, such systems are "expensive to implement" as described by Avitzour at column 1, line 58. Avitzour solves this problem through the use of the aforementioned "landmarks" that are "insensitive to errors in visual interpretation, and is simple enough to be implemented in a real time system" (Avitzour, column 1, line 66 – column 2, line 1) and that "precisely" determine "position and orientation" (Avitzour, column 2, line 10).

Thus, one would be motivated to make the above combination to ensure uninterrupted and robust location determination in an enclosed facility, that yields precise location information, and is simple and inexpensive to implement.

Summary of Applicant's Remarks: "The Kielland reference provides no motivation to one of ordinary skill in the art to look to the robot navigation art (such as Avitzour) for alternate means of determining the position of a parked vehicle" (response page 8, third paragraph down).

Examiner's Response: This appears to be an "analogous art" type argument. In response, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443

(Fed. Cir. 1992). In this case, the problem to be solved, as expressed by both Kielland and Avitzour, is the ability to locate objects within an enclosed facility where no satellite signals can be received. The Kielland and Avitzour is proper for at least this reason.

Summary of Applicant's Remarks: "The Avitzour reference provides no motivation for the cited combination of teachings" (response page 8, fourth paragraph down).

Examiner's Response: Page 7 of the previous Office Action provides a page of motivation. It is not clear which part of this motivation the applicant disagrees with. In summary, Kielland describes a problem, and Avitzour solves the problem complete with ample motivation as follows:

Kielland states that "while the patrol vehicle is operated within an enclosed parking facility (above or below ground) its positioning sub-system 53 must be suitable modified to provide adequate geo-referencing capability", where for example, "satellite signals will be blocked while operating within the facility, alternate position sensors must be available" at column 25, lines 34-40.

Avitzour solves this problem. Specifically, Avitzour states that commonly used location determination schemes suffer from "disadvantages" at column 1, line 32. In particular, one such disadvantage of "Satellite-base positioning" (i.e., such as the GPS system of Kielland) is that it "requires a clear communications path to a satellite" (Avitzour, column 1, lines 38-39). It is this "clear communication" that may be disrupted in a "paring facility" such as the one disclosed by Kielland. Further, such systems are

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"expensive to implement" as described by Avitzour at column 1, line 58. Avitzour solves this problem through the use of the aforementioned "landmarks" that are "insensitive to errors in visual interpretation, and is simple enough to be implemented in a real time system" (Avitzour, column 1, line 66 – column 2, line 1) and that "precisely" determine "position and orientation" (Avitzour, column 2, line 10).

Thus, one would be motivated to make the above combination to ensure uninterrupted and robust location determination in an enclosed facility, that yields precise location information, and is simple and inexpensive to implement.

The remainder of the applicant's argument rely upon the previous arguments, and present no further evidence of an improper combination.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

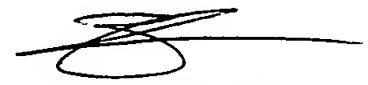
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Werner whose telephone number is 703-306-3037. The examiner can normally be reached on M-F, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Werner
Primary Examiner
Art Unit 2621
July 29, 2004



BRIAN WERNER
PRIMARY EXAMINER